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REMARKS

This paper is being presented in response to the final official action dated December 14, 2005, wherein: (a) claims 1, 3-8, and 10-13 were pending; (b) claims 1, 3-8, and 11-13 were rejected under 35 USC § 102(b) as being anticipated by Falster et al. U.S. Patent No. 5,994,761 ("Falster"); (c) claims 1, 3, and 4 were rejected under 35 USC § 102(b) as being anticipated by Nadahara et al. U.S. Patent No. 5,994,761 ("Nadahara"); and, (d) claim 10 was objected to under 37 CFR § 1.75(c) as being of improper dependent form. Reconsideration and withdrawal of the rejections are respectfully requested in view of the foregoing amendments and following remarks.

This paper is being presented within two months of the date of mailing of the final office action.

This paper also is being presented in accordance with 37 CFR § 1.116(b)(1) and (b)(2) in an effort to place the application in condition for allowance. The amendments presented herein were not presented in prior communications to the U.S. Patent and Trademark Office (PTO) due to the applicant's good faith belief that all prior objections/rejections had been overcome by amendment and/or argument. Further, the amendments and arguments presented herein could not have been presented earlier, as they are being made in response to rejections raised in the most recent, final office action.

No fee is believed due. In the event that a fee is due, please withdraw the necessary amount from deposit account 13-2855.

I. Brief Summary of the Amendments to the Claims

Claims 1, 4, 8, and 11 have been amended to recite that the silicon wafer also has a "central axis" in order to provide antecedent basis for the amendments related to the "second concentration" (discussed below).

The "concentration" formerly in claims 1, 4, 8, and 11 has been amended to "first concentration" in order to distinguish this feature from newly amended "second concentration" (discussed below).

Claims 1 and 4 have been amended to recite that "a second concentration distribution of defects in the bulk region is maintained substantially constant in a direction from the central axis to the circumferential edge portion." Claims 8 and 11 have been amended to recite that "a second concentration distribution of defects in the bulk region has a range of variation of about 10% or less in a direction from the central axis to the circumferential edge portion." Support for these amendments is found, for example, in the specification at page 33, line 19 to page 34, line 10 (stating that "the [radial] density of the BMDs occurs constantly") and in Figs. 15A and 15B (showing substantially constant radial BMD concentration profiles).

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Claim 6 has been amended to recite that "the distances of the first and the second denuded zones from the front and back surfaces respectively . . . are substantially constant in a direction from the central axis to the circumferential edge portion." Claim 13 has been amended to recite that "the distances of the first and the second denuded zones from the front and back surfaces respectively . . . have a range of variation of about 10% in a direction from the central axis to the circumferential edge portion." Support for these amendments is found, for example, in the specification at page 34, line 11 to page 35, line 14 (stating that "the depth of DZ [i.e., the denuded zones] is constant without . . . variation") and in Figs. 16A and 16B (showing substantially constant radial denuded zone depth profiles).

Claims 3 has been amended to recite the claim from which it properly depends (i.e., claim 1).

Claim 10 has been amended to recite the claim from which it properly depends (i.e., claim 8). Therefore, it is respectfully requested that the objection to claim 10 under 37 CFR § 1.75(c) be withdrawn.

New independent claim 47 has been added which recites all of the features previously presented in claims 8 and 10. Claim 10 was objected to under 37 CFR § 1.75(c) as being of improper dependent form, but was not rejected on the basis of any prior art. See pp. 2-5 of action. New claim 48 depends from claim 47 and recites the subject matter previously presented in claim 13. Because new claim 47 recites subject matter that is identical to that which was acted upon but not rejected, it is respectfully requested that claims 47 and 48 be allowed.

No new matter has been introduced by the foregoing amendments.

II. The 35 USC § 102(b) Rejection Is Traversed

Claims 1, 3-8, and 11-13 were rejected under 35 USC § 102(b) as being anticipated Falster. See pp. 3-4 of the action. Claims 1, 3, and 4 were rejected under 35 USC § 102(b) as being anticipated Nadahara. See p. 4 of the action.

A. Proper Basis for a § 102(b) Rejection

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Thus, a determination that a claim is anticipated under 35 USC § 102 involves two analytical steps. First, the U.S. Patent and Trademark Office (PTO) must interpret the claim language, where necessary, to ascertain its meaning and scope. In interpreting the claim language, the PTO is permitted to attribute to the claims only their broadest *reasonable* meaning as understood by persons having ordinary skill in the art, considered in view of the entire disclosure of the

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specification. See *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Second, the PTO must compare the construed claim to a single prior art reference and set forth factual findings that "each and every limitation is found either expressly or inherently [disclosed] in [that] single prior art reference." *Celeritas Techs. Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1360 (Fed. Cir. 1998). Additionally, "[t]he identical invention must be shown in as complete detail as is contained in the patent claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

B. The § 102(b) Rejection Is Traversed

It is respectfully submitted that the pending claims are not anticipated by either Falster or Nadahara.

Falster is directed to an oxygen out-diffusionless process for oxygen precipitating silicon wafers. Falster does not apparently disclose any radial dimensions of its wafers, either in its description or examples. Falster discloses that central region 17 of its wafer has a substantially uniform density of oxygen precipitates and that "substantially uniform" can mean a concentration variation as low as 10% or less. See Falster, at col. 7, lines 64-67 and col. 8, lines 47-50. However, Falster only indicates that such substantial uniformity applies in a direction perpendicular to the top and bottom surfaces, and not to a direction radially outward:

Thus, the wafer of the present invention will have a denuded zone and a substantially uniform oxygen concentration as a function of depth from the silicon surface.

Falster, at col. 8, lines 35-37 (emphasis added). Falster does not otherwise suggest that the radial distribution of defect concentration or denuded zone depth is either substantially constant or within a variation of about 10% or less.

Nadahara is directed to a method for heat treating a semiconductor substrate to reduce defects. Nadahara does not apparently disclose any radial dimensions of its wafers, either in its description or examples. Nadahara discloses a semiconductor substrate with a first region having a defect density not higher than 10^7 defects/cm³ and a second region having a constant defect density falling within a range of 10^7 defects/cm³ to 10^9 defects/cm³. Nadahara, at col. 4, lines 3-8. It is apparent that the term "constant defect density" applies to a direction perpendicular to the upper surface, and not to a direction radially outward, because Nadahara discloses a transition between its first and second regions as a function of the distance from the upper surface. See Nadahara, at col. 4, lines 8-11. Similarly, Figs. 2, 5, and 9 of Nadahara present depth profiles of defect concentration; none of the figures presents radial profiles of any kind. Nadahara does not otherwise suggest that the radial distribution of defect concentration or denuded zone depth is either substantially constant or within a variation of about 10% or less.

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Additionally, because neither Falster nor Nadahara disclose the recited features related to wafer size or the radial distribution of defect concentration and denuded zone depth, it is respectfully submitted that no *prima facie* case of obviousness under 35 USC § 103(a) exists on the basis of these two publications.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

In view of the foregoing, entry of the amendments to claims 1, 3, 4, 6, 8, 10, 11, 13, 47, and 48; reconsideration and withdrawal of the rejections and objections; and, allowance of all pending claims 1, 3-8, 10-13, 47, and 48 are respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, the examiner is urged to contact the undersigned attorney.

Respectfully submitted,

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